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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
KINNEY, ANNA L	

ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/652,587	BAJPAI ET AL.	
	Examiner	Art Unit	
	Anna Kinney	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4 and 12-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4 and 12-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/9/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 17, 2006 has been entered.

Response to Arguments

Applicant's arguments with respect to claims 1, 2, 4, and 12-17 have been considered but are moot in view of the new ground(s) of rejection.

The declaration under 37 CFR 1.132 filed April 17, 2006 is insufficient to overcome the rejection of claims 1, 2, 4, and 12-17 based upon Baecker in view of Yang under 35 USC 103 as set forth in the last Office action because: showing is not commensurate in scope with the claims. It refer(s) only to the system described in the above referenced application and not to the individual claims of the application. Thus, there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims. See MPEP § 716. The declaration also does not indicate the identity of the closest prior art to which the claims are compared. However, the Examiner has revised the rejections to apply new grounds of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4, 12-14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pearce et al (Pearce, Martin H., et al, "Screening Lignin Degrading Fungi for Biomechanical Pulping of Eucalypt Wood Chips, Proceedings 49th Appita Annual General Conference, Hobart, Tasmania, Australia, 2-7 April 1995; supplied by applicant) in view of Giovannozzi Sermanni et al (U.S. Patent 6,379,495) and Call (U.S. Patent 6,103,059).

With respect to claim 1, Pearce et al discloses a method for producing eucalyptus paper pulp for use in the making of paper (pg. 347, col. 1, lines 1-2 and 36-38), the method comprising the steps of: inoculating the eucalyptus wood chips (pg. 348, col. 2, last ¶) with white rot fungus which is Phanerochaete chrysosporium (pg. 347, col. 2, lines 8-12); b) fermenting the wood chips so as to cause a propagation of the fungus through the wood chips and allow the fungus to modify lignin (i.e., incubation; pg. 348, col. 2, last ¶, last line); and c) pulping of the degraded wood chips (pg. 348, col. 2, first 3 full ¶s). Pearce does not disclose expressly the resulting paper strength, nor that the wood chips are pulped by a kraft process.

Call discloses a method for producing pulp (title) from wood chips (col. 1, lines 65-67) wherein chips are pretreated with Phanerochaete chrysosporium (col. 1, lines 33-38) followed by pulping the chips using a known kraft process (col. 1, lines 65-67).

Giovannozzi Sermanni discloses a method for producing paper pulp from raw materials including arboreal species (col. 3, lines 33-38) such as eucalyptus (col. 4, lines 39-45) comprising inoculating a raw material (col. 3, lines 56-59) with a wood saprophyte mycelia (col. 3, lines 13-17), fermenting the raw material (e.g., reaction; col. 3, lines 60-64), and pulping the raw material (e.g., elementarisation; col. 3, lines 65-67; or col. 4, lines 26-27), wherein the paper produced by the pulp made by the method has a higher strength, as measured by burst index and tear index, than paper produced from pulp not treated with the wood saprophyte mycelia (Tables 1-4).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a kraft process, as described by Call, and to expect higher strength, as described by Giovannozzi Sermanni, in the pulp production method of Pearce, to obtain the invention as specified in claim 1.

The motivation would have been to achieve an improvement in cooking capacity and improved kappa reduction (Call, col. 2, lines 1-5); mechanical pulping requires relatively large amounts of electrical energy (Pearce, pg. 347, col. 1, lines 38-40); that processes using fungi having a high lignolytic activity provide improvement in strength characteristics of paper layers (Giovannozzi Sermanni, col. 2, line 63 – col. 3, line 10); and that another consequence of biotreatment is an increase in some properties of

strength of the obtained layer compared to an untreated control (Giovannozzi Sermanni, col. 9, lines 2-6).

With respect to claim 2, Pearce discloses a step of bleaching the pulp by a known bleaching process (pg. 348, col. 2, 4th full ¶). However, Pearce does not disclose expressly that the process is multistage.

Call discloses a step of bleaching the kraft pulp by a multistage bleaching process (col. 5, lines 16-24; col. 2, lines 25-33)

With respect to claim 4, Pearce discloses that the fermentation step is a static fermentation step (pg. 348, col. 2, last ¶).

With respect to claims 12 and 13, Pearce discloses that the wood chips are inoculated with the fungus and without nutrients pg. 348, col. 2, last ¶), or the wood chips are inoculated with the fungus and known nutrients (pg. 347, col. 2, last ¶).

With respect to claim 14, Pearce discloses that the moisture content of the chips prior to the step of inoculation is kept at 60% (pg. 348, col. 1, last ¶), which the Examiner construes to be the fibre saturation point or greater.

With respect to claim 16, Pearce discloses that the wood chips are inoculated with 1-2 gms inoculum / 250 gms wood (pg. 348, col. 2, last ¶). Pearce does not disclose expressly that the chips are inoculated with 1 to 5 gms inoculum/ton of wood. At the time of the invention, absent a showing of unexpected results, it would have been obvious to a person of ordinary skill in the art to optimize the application rate of inoculum to chips to achieve adequate colonization (pg. 350, col. 1, ¶ 1), and as a result, the desired degree of lignin degradation (pg. 348, col. 1, line 16). It has been

held that discovering the optimum or workable ranges or an optimum value of a result effective variable involves only routine skill in the art. See MPEP 2144.05 II.

With respect to claim 17, Pearce discloses that the moisture content in the wood during the step of fermentation is 60-65% (pg. 348, col. 2, last ¶), which contains 2 specific points (60, 65) within the claimed range of 55-65%.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pearce in view of Call and Giovannozzi Sermanni, as applied to claim 1 above, and further in view of Akhtar (U.S. Patent 5,620,564).

With respect to claim 15, Pearce, Call, and Giovannozzi Sermanni do not disclose expressly that said moisture content is 50-55% of the total wood based on a wet weight of the chips.

Akhtar discloses that the moisture content is 55-65% of the total wood, which contains one specific endpoint within the claimed range of 50-55%, based on the wet weight of the chips (col. 3, lines 58-63 and col. 4, lines 28-31).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a moisture content as described by Akhtar in the wood chips of Pearce, Call, and Giovannozzi Sermanni to obtain the invention as specified in claim 15.

The motivation would have been that because conditions of high humidity during the fermentation process will be desired, a relatively high moisture content of the chips prior to fermentation is most desirable, preferably at the fiber saturation point or greater (col. 3, lines 54-63).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. 3,962,033 shows a method of producing cellulose pulp using Sporotrichum pulverulentum (another name for Phanerochaete chrysosporium) to treat wood chips, followed by sulphate (i.e., kraft) digestion. U.S. 6,402,887 shows biopulping wood chips by incubating the chips with a white-rot fungi, followed by kraft pulping, with excellent strength properties.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Kinney whose telephone number is (571) 272-8388. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALK

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